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Oct 10, 2002

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Operations Manager Report

- **Summary of Stores**
- **Recent Si Jumper Failures**

Summary of Stores

- **Record week of data taking**
- **~ 5.5 pb^{-1} data* to tape @ efficiency ~ 80 %**

Store	Start	Duration (hr)	Init. Lum (E30)	B0TLUM (nb^{-1})	B0TLIV (nb^{-1})	Eff. (%)	Comments
1823	10/03 Thu	10.4	27.8	587.0	390.2	66.5	Losses, SVX B4 W0,W1
1824	10/04 Fri	14.1	30.1	753.1	471.9	62.7	D.T. variety of sources
1826	10/05 Sat	14.3	29.8	816.5	609.0	74.6	DPS, jumper, TEVMON
1828	10/06 Sun	12.4	26.9	745.0	596.0	80.0	COT dto's, Si trip, caen
1830	10/06 Sun	15.2	24.2	764.2	581.5	76.1	CMX trips, TEVMON, TT
1832	10/07 Mon	15.5	30.9	956.3	811.5	84.9	Smxr, Fcal, wait TEVMON to let us run…
1834	10/08 Tue	18.0	34.9	1158.4	941.3	81.3	L1A > 14kHz, CMU trips
1836	10/09 Wed	20.5	37.0	1391.1	1082.0	77.8	New XFT design, Si cooling trip, COT trip

* Silicon in > 97%

Thursday 10/03 - Store 1823
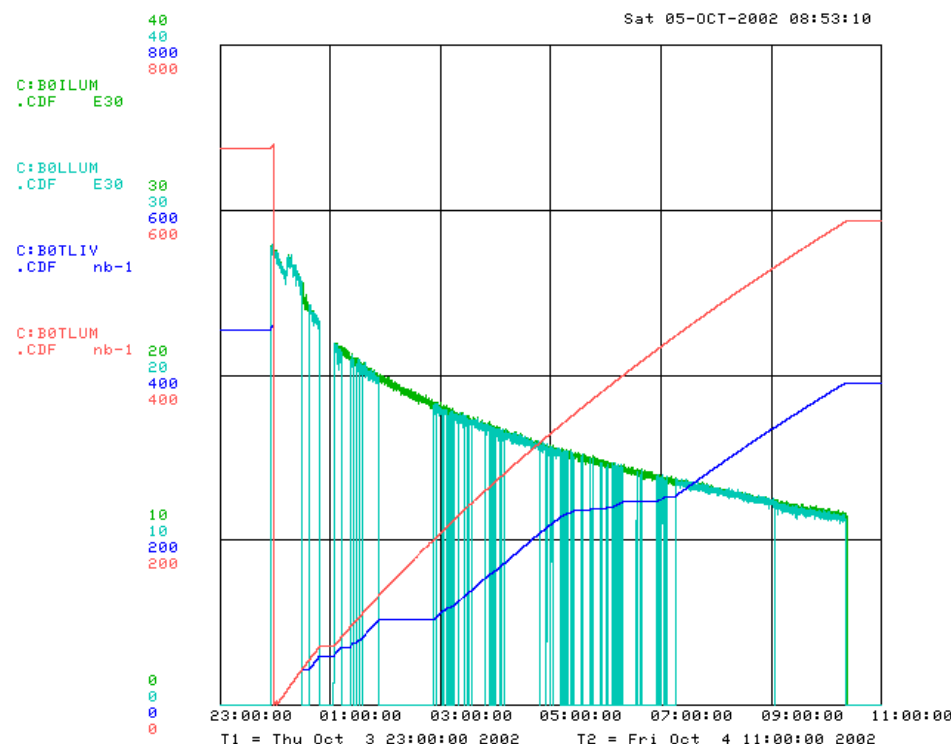
- **Losses a little high at start**
  - Rescraped
- **Downtime**
  - B0fib00 – had to remove a ladder.
  - L2 done t.o. had to temporarily remove SVX B4 W0 & W1
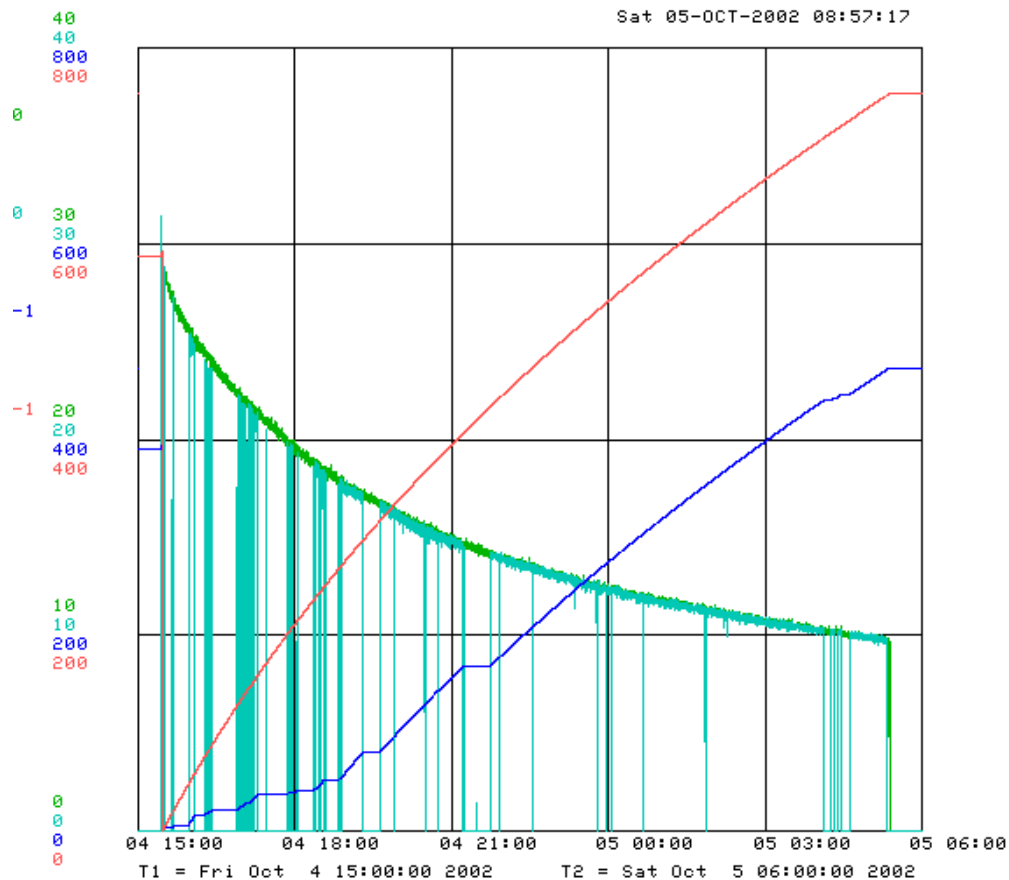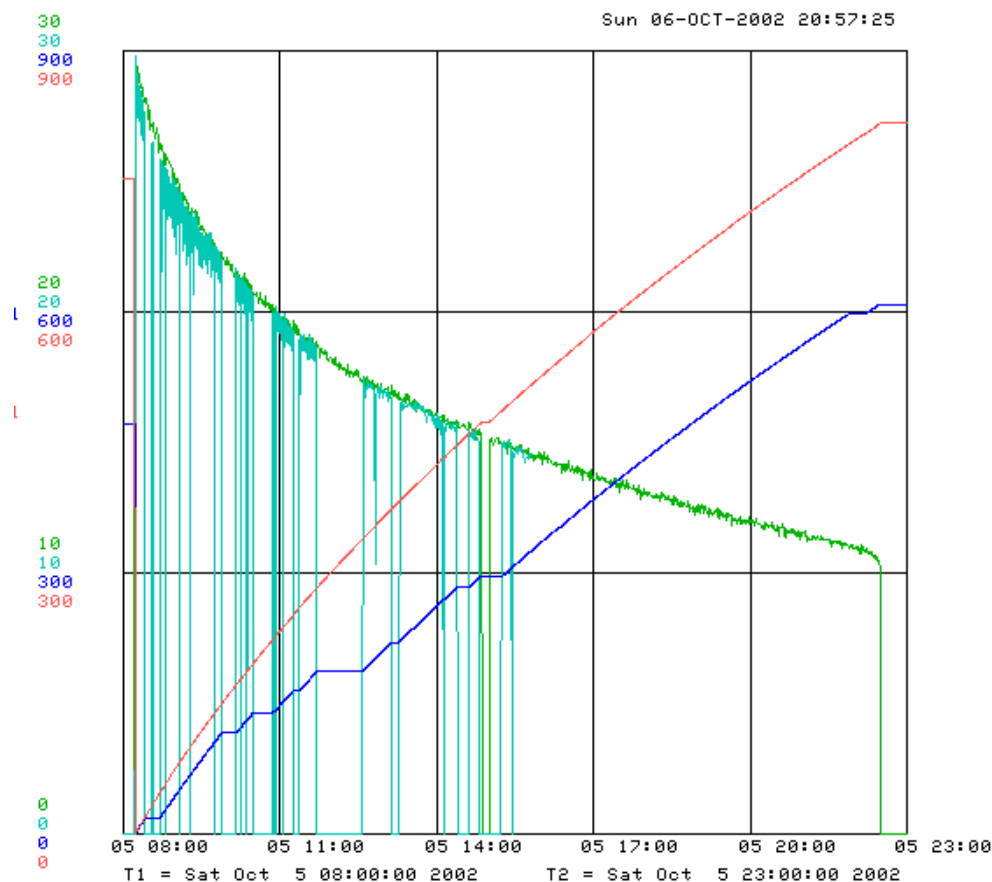- **Lost beam w/Quench at F4**

Friday 10/04 - Store 1824

- **early downtime**
  - L2 decision t.o.'s
  - New alpha firmware
  - Alpha crash
  - SVT d.t.o's
  - DPS
  - Error logger
- **Smooth running thereafter**
- **Si Dmode calibrations**

Saturday 10/05 - Store 1826

Sun 06-OCT-2002 20:57:25

T1 = Sat Oct 5 08:00:00 2002   T2 = Sat Oct 5 23:00:00 2002

- **DPS teething problems**
- **Si jumper failure sb1w3L4**
  - avdd overcurrent
- **Cmx trip**
- **Tevatron CRYO problems**
  - We go to stdby
- **TEVMON – alerts shift crew to rise in protons in abort gap.**
  - Notify MCR
  - Tev RF8 system problem
  - Lose beam while trying to recover. Failure triggered in 3 neighboring stations
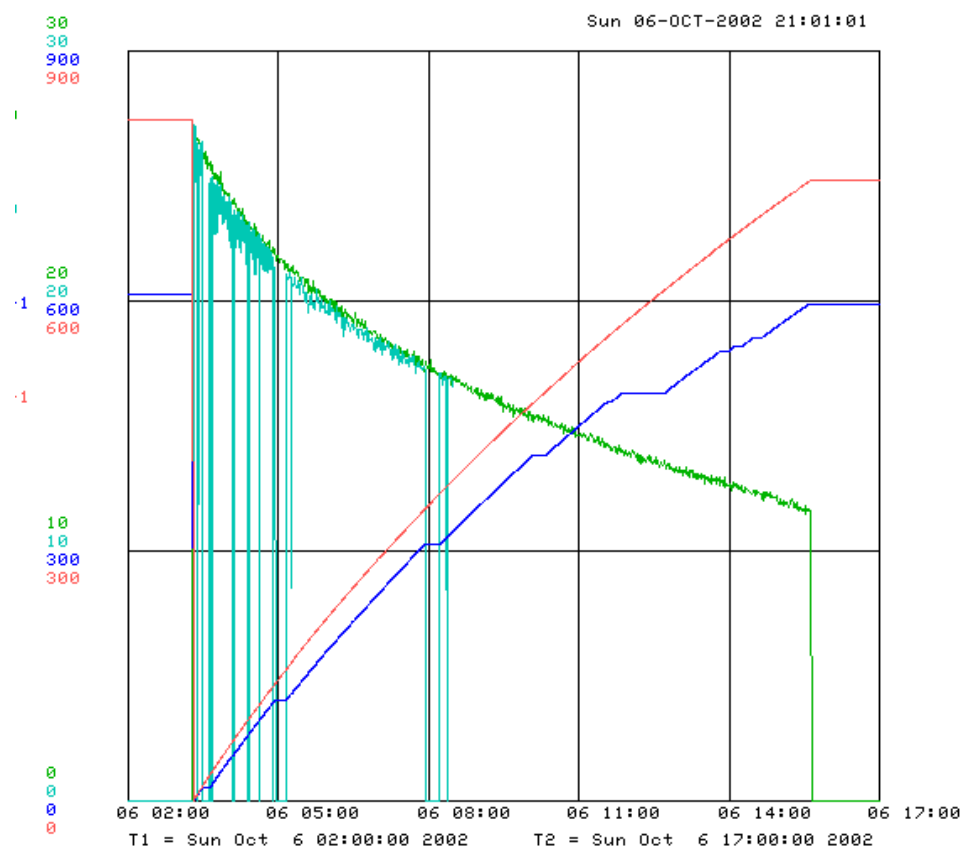- **Test new trigger tables for jdl.**

Sunday 10/06 - Store 1828

Sun 06-OCT-2002 21:01:01

- **Tof TOTRIB board in tdc test crate work.**
- **Shot goes in fast.**
- **Smooth running.**
- **Downtime**
  - COT crate done t.o's
  - Si trip
  - L2
  - Plug HV – caen crate problem
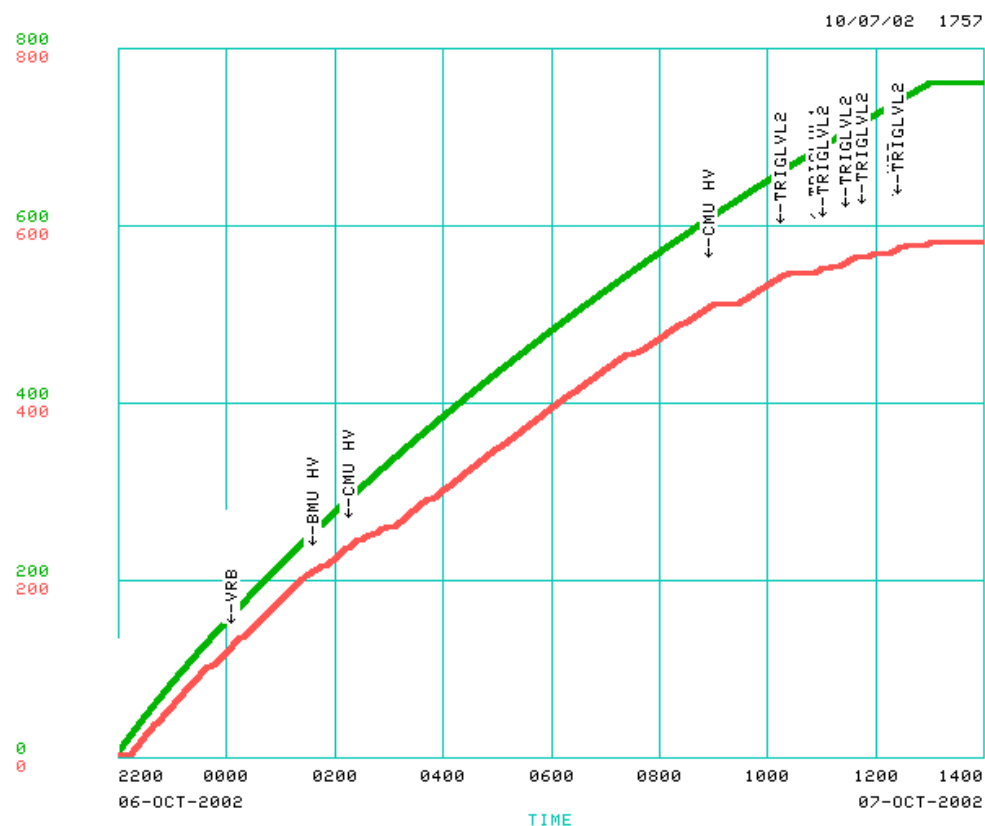- **Trigger testing at end of store**

Sunday 10/06 - Store 1830

- **Losses low initially, so Si in fast**

- **periodic losses in**
  - LOSTPB 10-12KHz range causes frequent **CMX trips** in SE. Turned tripping wedges OFF until losses go away.

- **RF station lost.**
  - Shift crew alerted by TEVMON.
  - Shift crew in turn alerts MCR, who did not see this because of problems with alarms that did not announce the RF loss.

- **Test new L2 firmware w/o Si. Successful so left in as default.**

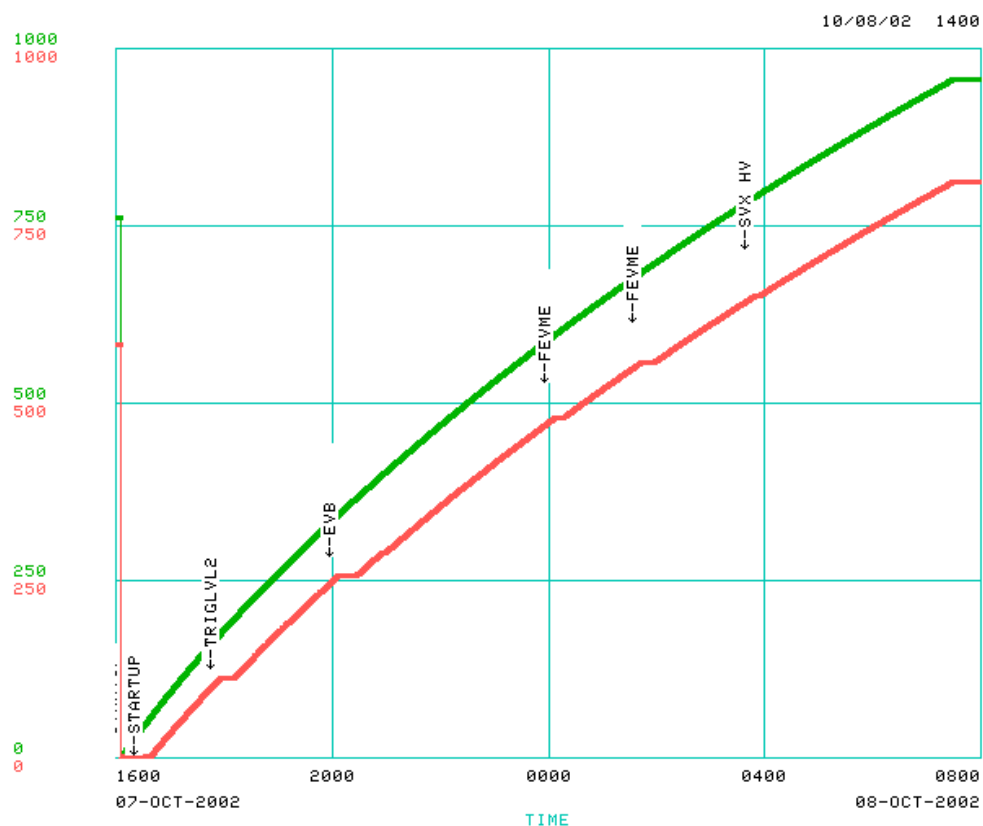- **Some Diffractive trigger testing.**

- **DPS work between stores.**

Monday 10/07 - Store 1832

- **High initial Lum.**

- **DPS working better.**

- **A little slow getting going…**
  - SMXR board(pcal01) and fcal00 crate problems delay start.
  - Losses low and stable but wait for TEVMON (10min) to integrate SI.

- **Downtime**
  - L2 alpha processor hang - associated w/new L2 firmware.
  - busy t.o. from svx & evb cleanup.
  - L2 decision t.o.

- **Despite list above, very smooth datataking, eff ~ 85% for whole store.**

Tuesday 10/08 - Store 1834
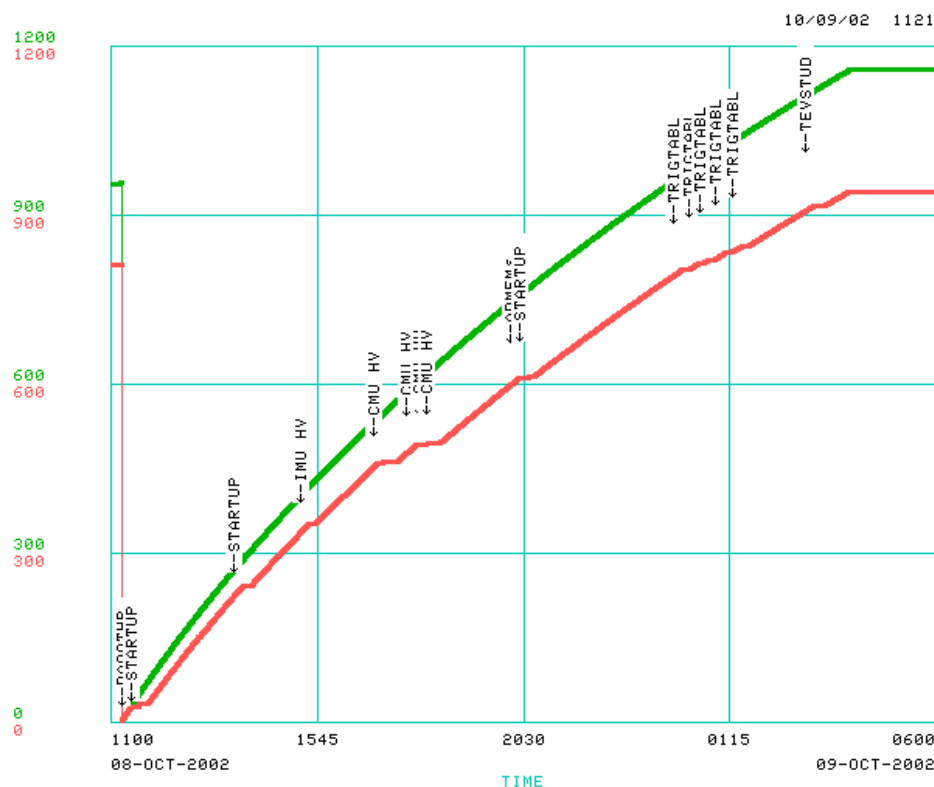
- **Start a little slow again**
  - pcal05 done t.o. delays start
  - L1 Rate > 14KHz, had to prescale by hand to get L1 rate below 12KHz and L2 rate below 300Hz.
- **Down time**
  - L2 Decision t.o.
  - CMU trips. NE E3 Cathode problem; turned off.
    Needs attention between stores.
- **High Lum trigger testing near end of store.**
- **Tevatron perform TEL studies. Losses high-we set HV to stdby.**
- **XFT Finder design changed from 2-miss to 1-miss between stores in preparation for next high lum shot.**

Wednesday 10/09 - Store 1836
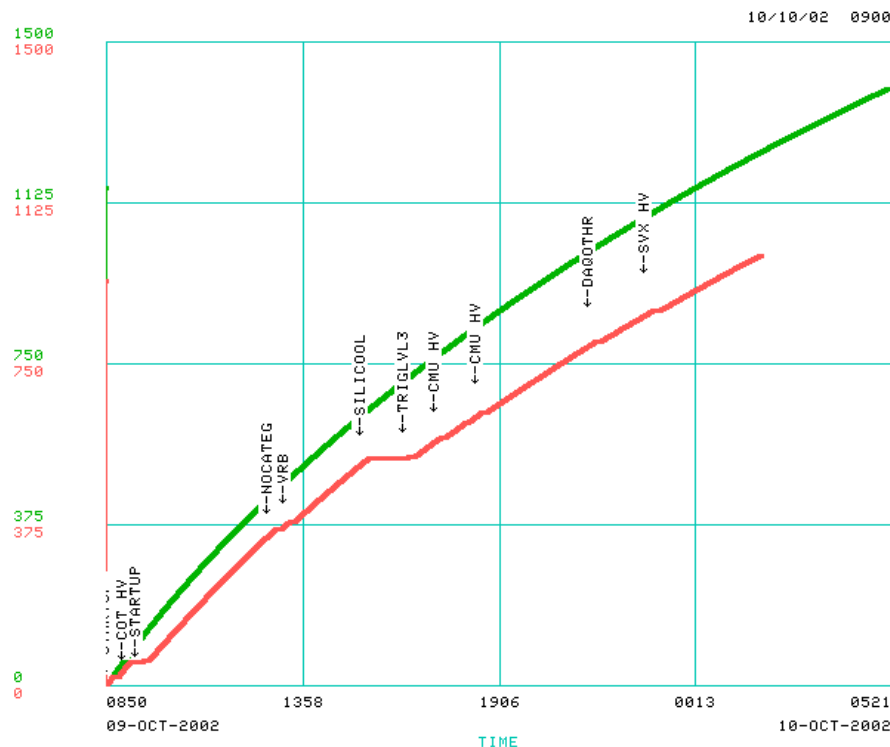
- **Another record Store !**
- **at start of store**
  - Losses low, we're in fast
  - Get a high lum data point for jdl's test table
  - L1A Rates lower at start with new XFT finder 1 miss design
- **COT trip.**
- **Silicon cooling trip**
  - ISL chiller bypass valve spontaneously closed
- **Si reformatter errors.**
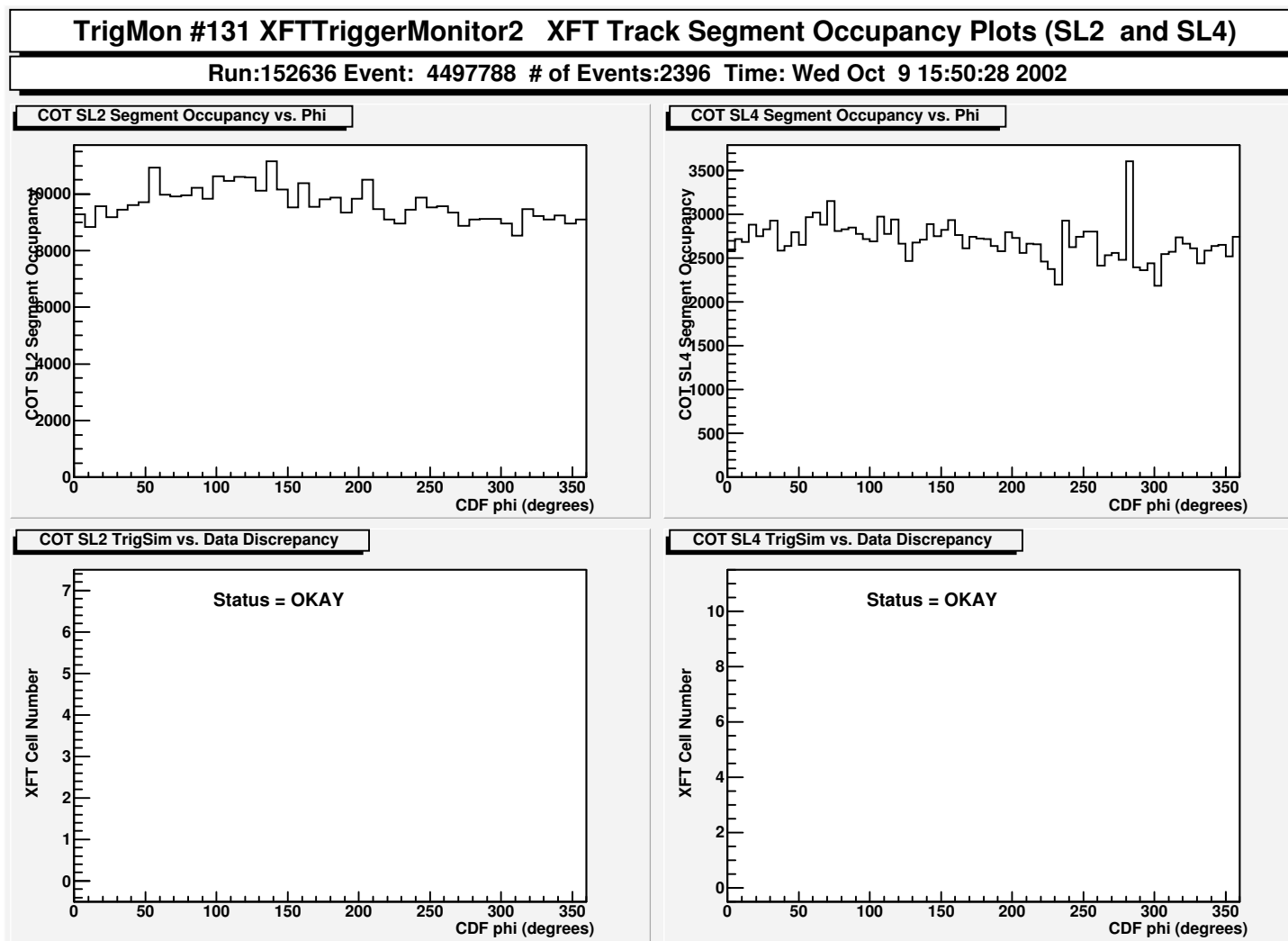- **SVXMON auto HRR working!**
- **CMU trips**
- **Si trip**

XFT Finder design change from 2-miss to 1-miss

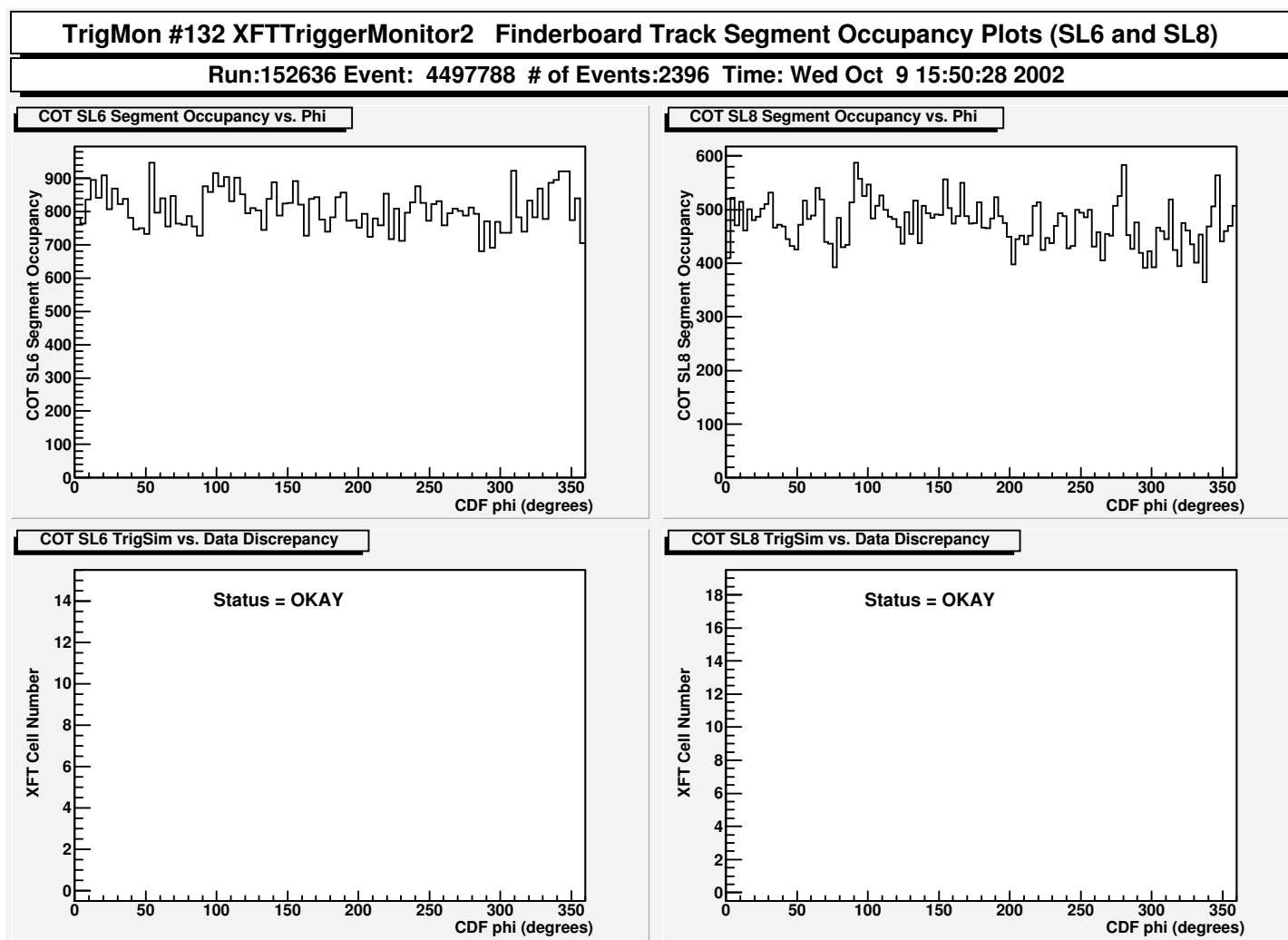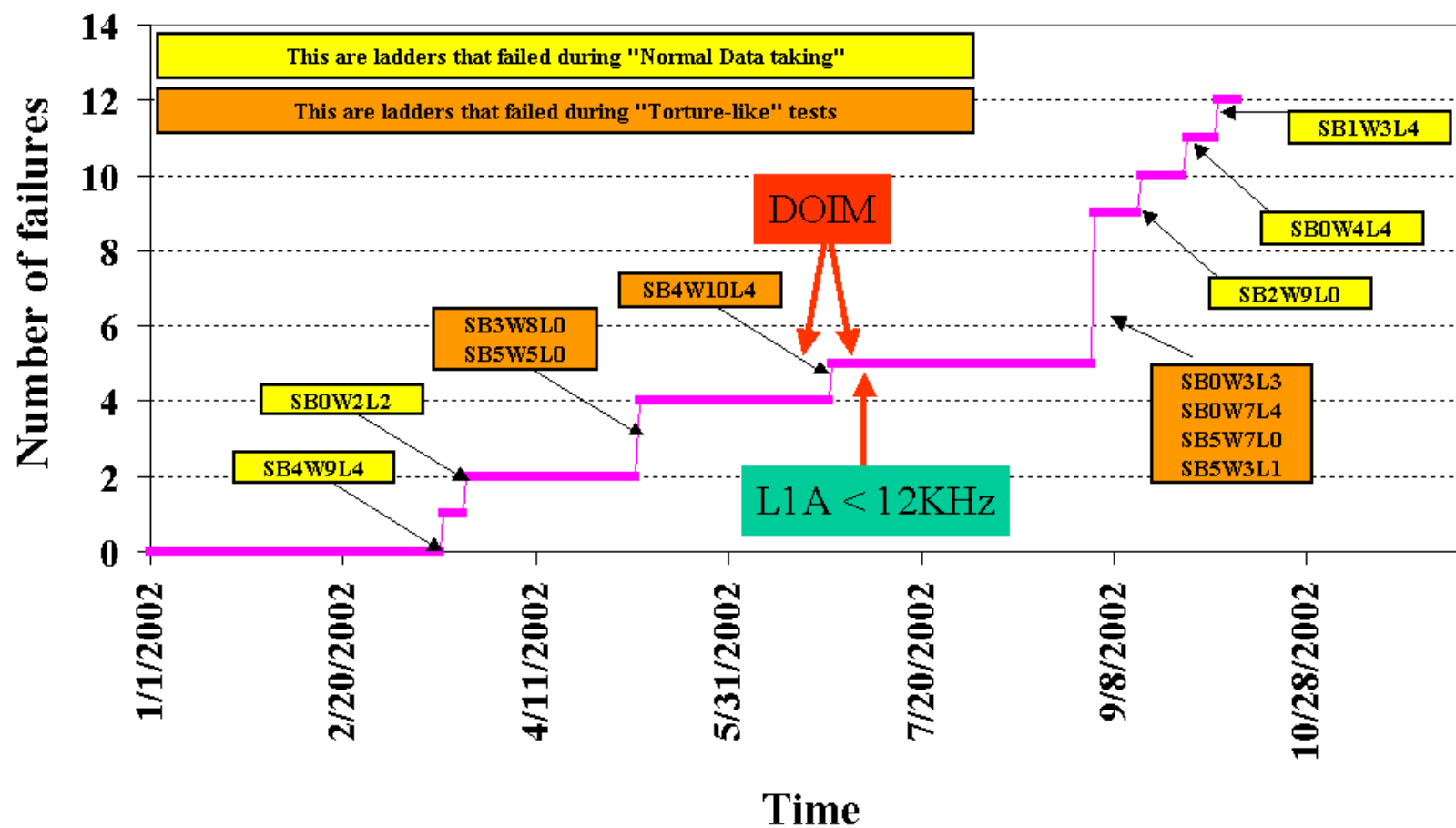# XFT Finder design change from 2-miss to 1-miss

Recent Si Jumper Failures

- **Failures seem to be increasing recently**
  - Loss of jumpers means loss of z-info, NOT loss of trigger info
- **Previously thought to be due to anomalous triggers.**
- **But maybe now it is due to "Normal data taking" with higher lum & rates.**

Si Jumper Failures

Si Jumper Failures

		Bulkhead					
		0	1	2	3	4	5
W	1						
E	2	L2					
D	3	L3	L4				L1
G	4	L0					
E	5						L0
	6						
	7	L4					L0
	8				L0		
	9			L0		L4	
	10					L4	
	11						

Silicon Jumper Failures

- **Questions:**
  - **What are the implications of losing r-z information ?**
    - **Meeting on Friday with Silicon, Operations, and Physics groups to try to understand this.**
  - **Is the L1 limit of 12kHz relevant ?**
    - **No DOIM failures since, but still may be due to L2 Torture tests.**
  - **What is being done ?**
    - **Silicon Task Force**
      - **Time is an issue**
      - **Would like more help, non Si experts welcome!**
    - **Operations**
      - **Symptoms in the data seemingly linked to jumper failures.**
      - **New Monitoring Ace and Co duties and new tools**

Recent Silicon Failures

- **Monitoring Ace Duties**
  - IMON monitors current in the Silicon channels
  - Monitoring Ace watches for channels that are out of tolerance
  - Fast response helps to prevent failures
- **Co Duties and new tools**
  - SvxMon Errors: cell ID out of sync for a number of chips and/or chips with stuck cell ID on same ladder are also symptoms of jumper failure.
  - New version of ErrorHandler issues a Auto HRR in response to this condition as instructed by SVXMON.
  - Last night was the first time a consumer monitor has sent a registered message through ConsumerErrorReceiver and ErrorHandler performing a specified automatic action. Part of package of consumer framework.
    - Svxmon -> ConsumerErrorReceiver -> ErrorHandler -> Run Control
  - TEVMON: monitors beam conditions potentially dangerous to Si.
    - Working very well. Two cases this week TEVMON alerted shift crew to such conditions (losing an RF station) before MCR knew about them !

Summary

- **Another record breaking week!**
- **High lum trigger tables & XFT 1 miss design(done).**
  - **New High Lum tables are coming soon.**
  - **XFT 1 miss design working.**
  - **See JDL's talk**
- **Recent Silicon Jumper Failures**
  - **Silicon Task Force**
  - **Meeting w/ Si, Phys, and Ops to look at implications of loss of r-z**
  - **Operational Response**
    - **IMON – monitor Si channel currents**
    - **SVXMON requests Auto-HRR – a first from a consumer monitor!**
    - **TEVMON working very well !**